



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

ED 01 1999

8/A
John
2/20/99

In re Application of:
Frank H. Portugal, et al.

§ Group Art Unit: 1643

Serial No.: 09/027,439

§ Examiner: J. Souaya

Filed: February 20, 1998

§ Atty. Docket No.: 044198.0000

For: Compositions and Methods for Differentiating Among *Shigella* Species and *Shigella* from *E. coli* Species

۲۰۰

BOX NON-FEE AMENDMENT
Assistant Commissioner for Patents
Washington, D.C. 20231

CERTIFICATE OF MAILING
37 C.F.R. 1.8

I hereby certify that this document (along with any papers referred to as been attached) is being deposited with the U.S. Postal Service as First Class Mail in an envelope addressed to: Box Non Fee Amendment, Assistant Commissioner for Patents, Washington, D.C. 20231, on the date below:

January 21, 1999 
Date Gloria L. Norberg

**AMENDMENT; RESPONSE TO EXAMINER'S TELEPHONE REQUEST
REGARDING SEQUENCE LISTING**

Sir:

The present paper is submitted in response to the Examiner's telephone request regarding sequence listing information, confirmed to Mark J. Gatschet, Reg. No. 42,569, on January 4, 1999. No fees are believed due for submission of the present documents. However, the Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§1.16 - 1.21 which may be required to Akin, Gump, Strauss, Hauer, & Feld Deposit Account No. 01-0660.

AMENDMENT

In the Specification:

At the end of Table 1 on page 13, please insert:

G1

23	nucleotide sequence of region 71-100 of <i>E. coli</i> (rrnG) (ECRRNGPK3) 16s rDNA
24	nucleotide sequence of region 71-100 of <i>E. coli</i> (rrrnE) (ECRRNEPK3) 16s rDNA
25	nucleotide sequence of region 71-100 of <i>E. coli</i> (rrnC) (ECRRNCPK3) 16s rDNA
26	nucleotide sequence of region 71-100 of <i>E. coli</i> (ATCC 25922) 16s rDNA
27	nucleotide sequence of region 71-100 of <i>E. coli</i> (ATCC 11775T) 16s rDNA
28	nucleotide sequence of region 71-100 of <i>S. dysenteriae</i> (French Strain) 16s rDNA
29	nucleotide sequence of region 71-100 of <i>S. dysenteriae</i> (ATCC 13313) 16s rDNA
30	nucleotide sequence of region 1001-1040 of <i>E. coli</i> (rrnC) (ECORRNCPK3) 16s rDNA
31	nucleotide sequence of region 1001-1040 of <i>E. coli</i> (ECOTSF) 16s rDNA
32	nucleotide sequence of region 1001-1040 of <i>S. sonnei</i> (French Strain) 16s rDNA
33	nucleotide sequence of region 1001-1040 of <i>S. dysenteriae</i> (ATCC 13313) 16s rDNA
34	nucleotide sequence of region 245-280 of <i>E. coli</i> (ECORRD) 16s rDNA
35	nucleotide sequence of region 245-280 of <i>E. coli</i> (rrnD) (ECRRNDPK3) 16s rDNA

Please delete Table 2 at page 26, line 17, to the end of page 31, and substitute Table 2 as follows:

G2

-- Table 2. Sequence comparisons of 16s rDNA from *Shigella* sp. and *E. coli* sp.

ORGANISM	REGION ²	SEQUENCE
<i>E. coli</i> (ECORRD) ¹ SEQ ID NO:8	71-100	80 90 100 AACAGGAAGA AGCTTGCTCT TT GCTGACGA 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
<i>E. coli</i> (rrnG) (ECRRNGPK3) SEQ ID NO:23	71-100	-----AC -----G- --/C\-----
<i>E. coli</i> (rrrnE) (ECRRNEPK3) SEQ ID NO:24	71-100	----- -----/T\-----
<i>E. coli</i> (rrnD) (ECRNNNDPK3)	71-100	-----AC -----G- --/C\-----

92

<i>E. coli</i> (rrnC) (ECRRNCPK3) SEQ ID NO:25	71-100	-----AC ----- /C\-----
<i>E. coli</i> (rrnB) (ECRRNBPK3)	71-100	----- /T\-----
<i>E. coli</i> ATCC 25922 SEQ ID NO:26	71-100	-----CG ----- /G\-----
<i>E. coli</i> (rrnB) (ECRRNBPZ)	71-100	----- /T\-----
<i>E. coli</i> ATCC 11775T SEQ ID NO:27	71-100	-----C ----- /G\-----
<i>E. coli</i> (rrnB) (ECRRNBPZ)	71-100	----- /T\-----
<i>E. coli</i> K-12 (ECOTSF)	71-100	----- /T\-----
<i>E. coli</i> (rrnB) (ECORGNB)	71-100	----- /T\-----
<i>E. coli</i> (ECOUW89)	71-100	----- /T\-----
<i>E. coli</i> (ECOUW89)	71-100	----- /T\-----
<i>S. flexneri</i> ATCC 12022	71-100	-----C -----G- ---/C\-----
<i>S. flexneri</i> French Strain	71-100	-----C -----G- ---/C\-----
<i>S. flexneri</i> ATCC 29903 (present disclosure) SEQ ID NO:9	71-100	-----C -----G- ---/C\-----
<i>S. sonnei</i> ATCC 9290	71-100	-----AC -----G- ---/C\-----
<i>S. sonnei</i> French Strain	71-100	-----AC -----G- ---/C\-----

<i>S. sonnei</i> ATCC 29930 (present disclosure) SEQ ID NO:10	71-100	-----AC -----G- --/C\-----
<i>S. dysenteriae</i> ATCC 13313 (present disclosure) SEQ ID NO:11	71-100	-----A---C ----- - - - -
<i>S. dysenteriae</i> French Strain SEQ ID NO:28	71-100	-----C -----GC ---/T\-----
<i>S. dysenteriae</i> ATCC 13313 SEQ ID NO:29	71-100	-----A---C -----G- - - - -
<i>S. boydii</i> ATCC 8700 (present disclosure) SEQ ID NO:12	71-100	-----C ----- -C -----
<i>S. boydii</i> ATCC 9207	71-100	-----C -----G- --/C\----- A
<i>E. coli</i> (ECORRD) SEQ ID NO:13	961-991	970 980 990 CGATGCAACG CGAAGAACCT TACCTGGTCT T
<i>E. coli</i> (rrrnG) (ECRRNGPK3)	961-991	----- - - - - - - - -
<i>E. coli</i> (rrrnE) (ECRRNEPK3)	961-991	----- - - - - - - - -
<i>E. coli</i> (rrrnD) (ECRRNDPK3)	961-991	----- - - - - - - - -
<i>E. coli</i> (rrnC) (ECRRNC)	961-991	----- - - - - - - - -
<i>E. coli</i> (rrnB) (ECRRNB)	961-991	----- - - - - - - - -

<i>E. coli</i> ATCC 25922	961-991	-----
<i>E. coli</i> (rrnB) (ECRRNBZ)	961-991	-----
<i>E. coli</i> ATCC 11775T	961-991	-----
<i>E. coli</i> (ECRRNBZ)	961-991	-----
<i>E. coli</i> (ECOTSF)	961-991	-----
<i>E. coli</i> (rrnB) (ECORGNB)	961-991	-----
<i>E. coli</i> (ECOUW89)	961-991	-----
<i>E. coli</i> (ECOUW89)	961-991	-----
<i>S. flexneri</i> ATCC 12022	961-991	-----
<i>S. flexneri</i> French Strain	961-991	-----
<i>S. flexneri</i> ATCC 29903 (present disclosure) SEQ ID NO:13	961-991	-----
<i>S. sonnei</i> ATCC 29930 (present disclosure) SEQ ID NO:14	961-991	---C-----X-----
<i>S. sonnei</i> French Strain X	961-991	-----
<i>S. sonnei</i> ATCC 9290	961-991	-----

92

<i>S. dysenteriae</i> ATCC 13313 (present disclosure) SEQ ID NO:13	961-991	-----
<i>S. dysenteriae</i> French Strain	961-991	-----
<i>S. dysenteriae</i> ATCC 13313	961-991	-----
<i>S. boydii</i> ATCC 9207	961-991	-----
<i>S. boydii</i> ATCC 8700 (present disclosure) SEQ ID NO:13	961-991	-----
<i>E. coli</i> (ECORRD) SEQ ID NO:15	1001- 1040	1010 1020 1030 GGAAGTTTTC AGAGATGAGA ATG TGCCTTC 1040 GGGAACCGTG
<i>E. coli</i> (rrnD) (ECORRNDPK3)	1001- 1040	-----
<i>E. coli</i> (rrnC) (ECORRNCPK3) SEQ ID NO:30	1001- 1040	----- NN ----- -----
<i>E. coli</i> (rrnB) (ECRRNBPK3)	1001- 1040	-----
<i>E. coli</i> ATCC 25922	1001- 1040	-----
<i>E. coli</i> (ECRRNBPZ)	1001- 1040	-----
<i>E. coli</i> ATCC 11775T	1001- 1040	-----
<i>E. coli</i> (rrnB) (ECRRNBPZ)	1001- 1040	-----

G2

<i>E. coli</i> (ECOTSF) SEQ ID NO:31	1001- 1040	A---C---C- -----X-- T--/G\----- -----T---
<i>E. coli</i> (rrnB) (ECORGNB)	1001- 1040	----- ----- -----
<i>E. coli</i> (ECOUW89)	1001- 1040	----- ----- -----
<i>E. coli</i> (ECOUW89)	1001- 1040	----- ----- -----
<i>S. flexneri</i> ATCC 12022	1001- 1040	----- ----- -----
<i>S. flexneri</i> French Strain	1001- 1040	----- ----- -----
<i>S. flexneri</i> ATCC 29903 (present disclosure) SEQ ID NO:15	1001- 1040	----- ----- -----
<i>S. sonnei</i> ATCC 29930 (present disclosure) SEQ ID NO:16	1001- 1040	A---C---C- -----X-- T--/G\----- -----T---
<i>S. sonnei</i> French Strain SEQ ID NO:32	1001- 1040	-----C- -----GA- -A-/G\----- -----
<i>S. sonnei</i> ATCC 9290	1001- 1040	----- ----- -----
<i>S. dysenteriae</i> ATCC 13313 (present disclosure) SEQ ID NO:17	1001- 1040	A---C---C- -----X-- /T\TG----- -----T---
<i>S. dysenteriae</i> French Strain	1001- 1040	----- ----- -----

92

<i>S. dysenteriae</i> ATCC 13313 SEQ ID NO:33	1001- 1040	A---CC---GT -----AC-- GG- ----- -- -----T---
<i>S. boydii</i> ATCC 9207	1001- 1040	----- ----- ----- -----
<i>S. boydii</i> ATCC 8700 (present disclosure) SEQ ID NO:15	1001- 1040	----- ----- ----- -----
<i>E. coli</i> (ECORRD) SEQ ID NO:34	245-280	AGCTAGTAGG TGGGGTAACG GCTCACCTAG GCGACG
<i>E. coli</i> (rrnG) (ECRRNGPK3)	245-280	----- ----- ----- -----
<i>E. coli</i> (rrnE) (ECRRNEPK3)	245-280	----- ----- ----- -----
<i>E. coli</i> (rrnD) (ECRRNDPK3) SEQ ID NO:35	245-280	----T--T-- ----- ----- A-- -----
<i>S. boydii</i> ATCC 8700 (present disclosure)	245-280	----T--T-- ----- ----- A-- -----

--.
Please delete original SEQUENCE LISTING pages 36-45 and renumber original pages 46 - 51 to new pages 36 - 41. Please make of record in the present application substitute SEQUENCE LISTING pages 1 - 8.

REMARKS

The present paper is in response to Examiner's Souaya's telephone request that sequences of Table 2 that differ from an existing sequence listing be added to the SEQUENCE LISTING.

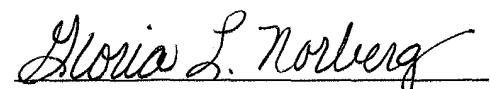
The present amendments to the specification add sequence identifiers to Table 2 as marked in red between carets in Attachment A. The same added sequence identifiers are added to Table 1. Further, SEQUENCE LISTING pages as originally filed are deleted, original claim and abstract pages are renumbered, and substitute SEQUENCE LISTING pages 1 - 8 are requested to be made of record in the present application.

Errors were found in Table 2 and are corrected by the amendment to the specification. Specifically, dashes (to indicate that a sequence is the same as the reference *E. coli* sequence) were omitted from lines 24, 30, 32, and 34 of page 26, lines 1, 3, 5, 7, 9, and 11 of page 27, lines 5, 7, 9, 11, 13, 15, 17, 21, 23, 25, 29, and 31 of page 30, and lines 1, 8, 15, and 21 of page 31. These corrections are also marked in red between carets in Attachment A. The context of Table 2, in particular, the definitions, as provided on page 7, line 2, and in superscript 1 on page 32, indicate that addition of the dashes does not constitute new matter. The original omission of the dashes was inadvertent.

Filed concurrently herewith is a statement under 37 CFR 1.821 (f) & (g), and a computer readable copy of the substitute sequence listing. Information recorded in computer readable form is identical to the written sequence listing. No new matter has been added to the specification by the amendments.

Respectfully submitted,

Date: January 21, 1999



Gloria L. Norberg
Registration No. 36,706
Agent for Applicants

Akin, Gump, Strauss, Hauer & Feld, L.L.P.
816 Congress Avenue, Suite 1900
Austin, Texas 78701
(512) 499-6200

Example 9
Genus-specific and Species-Specific Nucleotides

The numbering of the nucleotides that are genus-specific or species-specific, as used herein and in Tables 2 and 3, result from aligning the obtained sequence with the sequence of the 5 16s rDNA gene from *E. coli* which is provided as SEQ ID NO:7, and assigning the corresponding number of the *E. coli* sequence to those bases that are different or that are missing in the *Shigella* sequence. Base insertions in the *Shigella* sequence are referred to as an "p" base, i.e., an insertion following base 88, for example, is referred to herein as base 88p so as to keep the numbering consistent with the *E. coli* numbering sequence. Alignment was done manually; 10 probe sequences were analyzed against all known 16s RNA sequences of the Aligned Sequence Program, Ribosome Database Project, University of Illinois, Dept. of Microbiology, Urbana-Champaign, Illinois, and against all sequences of Genbank, operated by the National Library of Medicine.

15 Table 2 provides sequence comparisons of 16s rDNA from *Shigella* species and *E. coli* species.

Table 2. Sequence comparisons of 16s rDNA from *Shigella* sp. and *E. coli* sp.

ORGANISM	REGION ²	SEQUENCE
<i>E. coli</i> (ECORRD) ¹ SEQ ID NO:8	71-100	80 90 100 AACAGGAAGA AGCTTGCTCT TT GCTGACGA
<i>E. coli</i> (rrnG) (ECRRNGPK3) SEQ ID NO:23	71-100	-----AC -----G- - /C\-----
<i>E. coli</i> (rrrnE) (ECRRNEPK3) SEQ ID NO:24	71-100	----- ----- /T\-----
<i>E. coli</i> (rrnD) (ECRNNNDPK3)	71-100	-----AC -----G- - /C\-----
<i>E. coli</i> (rrnC) (ECRRNCPK3) SEQ ID NO:25	71-100	-----AC ----- /C\-----
<i>E. coli</i> (rrnB) (ECRRNBPK3)	71-100	----- ----- /T\-----
<i>E. coli</i> ATCC 25922 SEQ ID NO:26	71-100	-----CG ----- /G\-----
<i>E. coli</i> (rrnB) (ECRRNBBZ)	71-100	----- ----- /T\-----

<i>E. coli</i> ATCC 11775T SEQ ID NO:27A	71-100	-----C -----/G\----- A A
<i>E. coli</i> (rrnB) (ECRRNBZ)	71-100	----- -----/T\----- A A
<i>E. coli</i> K-12 (ECOTSF)	71-100	----- -----/T\----- A A
<i>E. coli</i> (rrnB) (ECORGNB)	71-100	----- -----/T\----- A A
<i>E. coli</i> (ECOUW89)	71-100	----- -----/T\----- A A
<i>E. coli</i> (ECOUW89)	71-100	----- -----/T\----- A A
<i>S. flexneri</i> ATCC 12022	71-100	-----C -----G- ---/C\-----
<i>S. flexneri</i> French Strain	71-100	-----C -----G- ---/C\-----
<i>S. flexneri</i> ATCC 29903 (present disclosure) SEQ ID NO:9	71-100	-----C -----G- ---/C\-----
<i>S. sonnei</i> ATCC 9290	71-100	-----AC -----G- ---/C\-----
<i>S. sonnei</i> French Strain	71-100	-----AC -----G- ---/C\-----
<i>S. sonnei</i> ATCC 29930 (present disclosure) SEQ ID NO:10	71-100	-----AC -----G- ---/C\-----
<i>S. dysenteriae</i> ATCC 13313 (present disclosure) SEQ ID NO:11	71-100	-----A---C ----- -----
<i>S. dysenteriae</i> French Strain SEQ ID NO:28A	71-100	-----C -----GC ---/T\-----

<i>S. dysenteriae</i> ATCC 13313 SEQ ID NO: 29A	71-100	-----A---C -----G-----
<i>S. boydii</i> ATCC 8700 (present disclosure) SEQ ID NO:12	71-100	-----C ----- -C -----
<i>S. boydii</i> ATCC 9207	71-100	-----C -----G- --/C\-----
<i>E. coli</i> (ECORRD) SEQ ID NO:13	961-991	970 980 990 CGATGCAACG CGAAGAACCT TACCTGGTCT T
<i>E. coli</i> (rrrnG) (ECRRNGPK3)	961-991	----- ----- -----
<i>E. coli</i> (rrrnE) (ECRRNEPK3)	961-991	----- ----- -----
<i>E. coli</i> (rrrnD) (ECRRNDPK3)	961-991	----- ----- -----
<i>E. coli</i> (rrnC) (ECRRNC)	961-991	----- ----- -----
<i>E. coli</i> (rrnB) (ECRRNB)	961-991	----- ----- -----
<i>E. coli</i> ATCC 25922	961-991	----- ----- -----
<i>E. coli</i> (rrnB) (ECRRNBZ)	961-991	----- ----- -----
<i>E. coli</i> ATCC 11775T	961-991	----- ----- -----
<i>E. coli</i> (ECRRNBZ)	961-991	----- ----- -----
<i>E. coli</i> (ECOTSF)	961-991	----- ----- -----
<i>E. coli</i> (rrnB) (ECORGNB)	961-991	----- ----- -----
<i>E. coli</i> (ECOUW89)	961-991	----- ----- -----
<i>E. coli</i> (ECOUW89)	961-991	----- ----- -----

<i>S. flexneri</i> ATCC 12022	961-991	----- ----- -----
<i>S. flexneri</i> French Strain	961-991	----- ----- -----
<i>S. flexneri</i> ATCC 29903 (present disclosure) SEQ ID NO:13	961-991	----- ----- -----
<i>S. sonnei</i> ATCC 29930 (present disclosure) SEQ ID NO:14	961-991	---C-----X-----
<i>S. sonnei</i> French Strain	961-991	----- ----- -----
<i>S. sonnei</i> ATCC 9290	961-991	----- ----- -----
<i>S. dysenteriae</i> ATCC 13313 (present disclosure) SEQ ID NO:13	961-991	----- ----- -----
<i>S. dysenteriae</i> French Strain	961-991	----- ----- -----
<i>S. dysenteriae</i> ATCC 13313	961-991	----- ----- -----
<i>S. boydii</i> ATCC 9207	961-991	----- ----- -----
<i>S. boydii</i> ATCC 8700 (present disclosure) SEQ ID NO:13	961-991	----- ----- -----

<i>E. coli</i> (ECORRD) SEQ ID NO:15	1001- 1040	1010 GGAAGTTTC 1040 GGGAACCGTG	1020 AGAGATGAGA ATG	1030 TGCCTTC
<i>E. coli</i> (rrnD) (ECORRNDPK3)	1001- 1040	----- -----	-----	^-^
<i>E. coli</i> (rrnC) (ECORRNCPK3) SEQ ID NO:30	1001- 1040	-----NN -----	-----	^-^
<i>E. coli</i> (rrnB) (ECRRNBPK3)	1001- 1040	----- -----	-----	^-^
<i>E. coli</i> ATCC 25922	1001- 1040	----- -----	-----	^-^
<i>E. coli</i> (ECRRNBZ)	1001- 1040	----- -----	-----	^-^
<i>E. coli</i> ATCC 11775T	1001- 1040	----- -----	-----	^-^
<i>E. coli</i> (rrnB) (ECRRNBZ)	1001- 1040	----- -----	-----	^-^
<i>E. coli</i> (ECOTSF) SEQ ID NO:31	1001- 1040	A---C---C- -----T---	X---T---/G\-----	-----
<i>E. coli</i> (rrnB) (ECORGNB)	1001- 1040	----- -----	-----	^-^
<i>E. coli</i> (ECOUW89)	1001- 1040	----- -----	-----	^-^
<i>E. coli</i> (ECOUW89)	1001- 1040	----- -----	-----	^-^
<i>S. flexneri</i> ATCC 12022	1001- 1040	----- -----	-----	-----
<i>S. flexneri</i> French Strain	1001- 1040	----- -----	-----	^-^
<i>S. flexneri</i> ATCC 29903 (present disclosure) SEQ ID NO:15	1001- 1040	----- -----	-----	^-^

<i>S. sonnei</i> ATCC 29930 (present disclosure) SEQ ID NO:16	1001- 1040	A---C---C- -----X-- T--/G\----- -----T---
<i>S. sonnei</i> French Strain SEQ ID NO:32	1001- 1040	-----C- -----GA- -A-/G\----- -----
<i>S. sonnei</i> ATCC 9290	1001- 1040	----- ----- ----- -----
<i>S. dysenteriae</i> ATCC 13313 (present disclosure) SEQ ID NO:17	1001- 1040	A---C---C- -----X--/T\TG----- -----T---
<i>S. dysenteriae</i> French Strain	1001- 1040	----- ----- ----- -----
<i>S. dysenteriae</i> ATCC 13313 SEQ ID NO:33	1001- 1040	A---CC--GT -----AC-- GG- ----- -----T---
<i>S. boydii</i> ATCC 9207	1001- 1040	----- ----- ----- -----
<i>S. boydii</i> ATCC 8700 (present disclosure) SEQ ID NO:15	1001- 1040	----- ----- ----- -----
<i>E. coli</i> (ECORRD) SEQ ID NO:34	245-280	AGCTAGTAGG TGGGGTAACG GCTCACCTAG GCGACG
<i>E. coli</i> (rrnG) (ECRRNGPK3)	245-280	----- ----- ----- -----
<i>E. coli</i> (rrnE) (ECRRNEPK3)	245-280	----- ----- ----- -----
<i>E. coli</i> (rrnD) (ECRRNDPK3) SEQ ID NO:35	245-280	----T--T-- -----A-- -----
<i>S. boydii</i> ATCC 8700 (present disclosure)	245-280	----T--T-- -----A-- -----